

## WHAT IS CLAIMED IS:

1. A composition comprising annatto extract.
2. The composition of claim 1, further comprising geranyl geraniols.
3. The composition of claim 1, further comprising tocotrienols.
4. The composition of claim 2, where the geranyl geraniols include cis and trans isomer forms.
5. The composition of claim 2, where the geranyl geraniols are all in the trans isomer form.
6. The composition of claim 2, where the geranyl geraniols contain one or more cis isomer forms.
7. The composition of claim 2, where the geranyl geraniols have a trans-to-cis isomer ratio between 1:100 to 100:1.
8. The composition of claim 3, where the tocotrienols are essentially in delta and gamma isomer forms.
9. The composition of claim 8, where the tocotrienols have a delta-to-gamma isomer ratio between 1:100 to 100:1.
10. The composition of claim 1, the annatto extract treats maladies selected from the group consisting of drug myotoxicity, non-drug myotoxicity, anemia, CoQ10-related syndrome of energetics and CoQ10-related syndrome of LDL protection.
11. The composition of claim 2, where the geranyl geraniols activate a PPAR.

12. The composition of claim 2, where the geranyl geraniols further down regulate SREBP transcription factors.
13. The composition of claim 1, where the annatto extract increases synthesis of CoQ10.
14. The composition of claim 2, where the geranyl geraniols increases synthesis of CoQ10.
15. The composition of claim 1, further comprising CoQ10, where the CoQ10 increases the synthesis of geranyl geraniols.
16. The composition of claim 1, where the annatto extract decreases triglyceride.
17. The composition of claim 2, where the geranyl geraniols decrease triglyceride.
18. The composition of claim 16, where the decrease in the blood level of the triglyceride has an effect selected from the group consisting of reversal of insulin resistance, metabolic syndrome, prediabetes, diabetes and diabetes-related cardiovascular disease.
19. The composition of claim 2, where the geranyl geraniols protect against protein loss due to a drug selected from the group consisting of cyclosporine, fibrate, statin, and bisphosphonate.
20. The composition of claim 2, where the composition is used as an adjunct to reduce toxic effects of drugs.
21. The composition of claim 1, where the annatto extract treats a malady effecting, selected from the group consisting of, insulin resistance, myopathy, GI track, renal insufficiency, organ transplant, an eye, protein wasting, an exercise injury, central nervous system, muscular system, excretory system, skin, protein deficit, blood, and a cancer.
22. The composition of claim 2, where the geranyl geraniols treat a malady effecting, selected from the group consisting of, insulin resistance, myopathy, GI track, renal insufficiency, organ

transplant, an eye, protein wasting, an exercise injury, central nervous system, muscular system, excretory system, skin, protein deficit, blood, and a cancer.

23. The composition of claim 1, where the annatto extract increases synthesis of a biochemical factor selected from the group consisting of CoQ10, dolichol, GG-prenylated protein, DL-glycosylated protein, GG-porphyrinated heme, intermediate isoprenoid, distal protein product, and porphyrin.

24. The composition of claim 2, where the geranyl geraniols increases synthesis of a biochemical factor selected from the group consisting of CoQ10, dolichol, GG-prenylated protein, DL-glycosylated protein, GG-porphyrinated heme, intermediate isoprenoid, distal protein product, and porphyrin.

25. A method to reverse insulin resistance, comprising administering annatto extract containing geranyl geraniols and potentiating insulin.

26. The method of claim 25, further comprising lowering the risk of a disease selected from the group consisting of CVD, T2DM, hypertension, PCOS and fatty liver disease.

27. A method to promote GI tract health, comprising geranyl geraniols and an ingredient selected from the group of consisting of a lower GI nutrient, endogenous nutrient, and non-drug vitamin.

28. A method to prevent pill esophagitis, comprising geranyl geraniols as an excipient in an excipient mix in a pill, selected from the group of consisting of compressed tablet, softgel gelatin, hard gel two-piece gelatin, bead, and granule..

29. A method to reduce drug toxicities, comprising administering annatto extract containing geranyl geraniols and reducing the myotoxicities of a drug selected from the group consisting of statin, cyclosporine, fibrate, and bisphosphonate.